AMENDMENTS TO THE CLAIMS

In the claims:

Please cancel claims 1-21.

Claims 1-21 (canceled)

Please add the following new claims:

22. (New) A method for altering a characteristic or state of a cell comprising:

treating a first cell type with an agent capable of altering a characteristic or state in a cell, wherein the agent is an extract, lysate, cellular component or mixture thereof derived or obtained from a second cell type having a desired characteristic or state; and

determining the degree of alteration in the treated cell by measuring a methylation signature within the genome of the treated cell, wherein a given methylation signature is indicative of an altered characteristic or state of the treated cell.

23. (New) The method according to claim 22 wherein the first cell type is selected from the group consisting of a cell derived from an individual suffering from age-related disabilities, a disease such as cancer, an autoimmune disease, cardiovascular problems such as myocardial infarction or ischemia, stem cell, T cell or monocyte of the immune and hematopoietic system, normal cell, and mixtures thereof.

24. (New) The method according to claim 23 wherein the first cell type is a stem cell.

25. (New) The method according to claim 22 wherein the second cell type is any cell type or combination of cell types.

26. (New) The method according to claim 25 wherein the second cell type is selected from the group consisting of a cell derived from a healthy individual, stem cell, T cell or monocyte of the immune and hematopoietic system, normal cell, and mixtures thereof.

27. (New) The method according claim 25 wherein the first and second cell types are selected from the group consisting of cells of the human haematopoietic system, stem cells, and epithelial cells.

28. (New) The method according claim 27 wherein the second cell type is derived from a normal or healthy individual of a cell type similar to the first cell type.

29. (New) The method according claim 28 wherein the second cell type is a stem cell.

30. (New) The method according to claim 22 wherein the first cell type cell and the second cell type cell are of the same cell type from the same species.

31. (New) The method according to claim 22 wherein the first cell type and the second cell type are not of the same cell type.

32. (New) The method according to claim 22 wherein the first cell type and the second cell type are not of the same species.

33. (New) The method according claim 32 wherein the second cell type is an amphibian cell and the first cell type is human or other mammalian cell.

34. (New) The method according to claim 22 wherein the first cell type is pre-treated so as to make the cell permeable to macromolecules.

35. The method according to claim 34 wherein the cell is pre-treated by electroporation, low temperature thermal shock, or various enzymes such as streptolysin O.

36. (New) The method according to claim 35 wherein the pre-treatment renders the cell temporally permeable.

37. (New) The method according to claim 22 further including:

culturing or growing the treated cell to obtain multiple copies of the treated cell.

38. (New) The method according to claim 37 wherein the treated cell is cultured in any suitable media or host under conditions that are suitable for cell growth and division.

39. (New) The method according to claim 38 wherein the host is a domestic animal selected from the group consisting of bovine, ovine, equine, poultry, and porcine.

40. (New) The method according to claim 22 wherein the methylation signature is a group of cytosines within a region of the genome that has a characteristic methylation signature which corresponds to a specific cell type.

41. (New) The method according claim 22 wherein the methylation signature is determined by the bisulphite modification and subsequent DNA sequence analysis.